

The macdonald Journal

SEPTEMBER 1971



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THE MACDONALD LASSIE

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Macdonald Journal
Volume 32, Number 9
September, 1971

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The Macdonald Journal is published
every month by Ronald J. Cooke
Ltd., 451 Beaconsfield Boulevard,
Beaconsfield, Quebec, 514 697-2916.

Texts in this issue may be reprinted
editorially without permission;
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The Editor, Macdonald College,
Quebec. Second class mail registra-
tion number 0463.

Subscription rates are \$7.00 for
two years, \$9.00 for three years
in Canada, U.S.A., and foreign
rates are \$10.00 for two years.
Printed in Canada

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Journal Jottings

We know he'll be back in '73.
We know, too, that there was to
be no special feature — "no
obituary" were the words and we
complied with this request but as
you will learn from the Guest
Editorial, Dr. H. G. Dion has doffed
the mantle of Dean of the Faculty
of Agriculture and of Vice Principal
of Macdonald College. And,
therefore, I sincerely believe that
the Macdonald Journal would be
guilty of irresponsible journalism if
we just let this man walk out
the door, even if he is leaving it
ajar, without some accolade,
however small.

Dr. Dion claims a dislike for the
task of administration. Then let all
top administrators share this same
feeling, for if one is to judge by
Dr. Dion's vast accomplishments
— at times against rather heavy
odds — then dislike must surely
be an essential prerequisite to good
administration. Too, any adminis-
trator with an open door policy has
my admiration and here at
Macdonald both staff and students
have always found the Dean, no
matter how busy, readily available
for counselling, for advice or even
for a friendly argument. This aspect
of Dr. Dion's tenure as Dean and
Vice Principal has been much
appreciated.

And finally — what more could any
of us ask for than the very fact
that we're still here and while we
are and until you return "Bye
George, we'll miss you!"

Hazel M. Clarke

The interest of young people in the new offerings at Macdonald College in the Environmental Sciences and Resource Management has been most encouraging, and confirms our feeling that new alignments of some of the material we have always been teaching in Agriculture on Conservation and Resource Management to direct students to new opportunities in the Ecological and Resource Management fields, would be welcomed by young people.

Our problem, of course, is that with the transfer of the Faculty of Education to McGill, Macdonald has room for many more students. The attractiveness of the new program suggests that we will soon return to full occupancy of the Campus.

The new programs have been called by some of the staff "Agriculture Plus" since we will continue to serve Agriculture and Food Science with the same calibre of training as in the past, but in addition, the bricks that we used to build our former curricula have been assembled as well in new ways to produce new kinds of environmentally-oriented specialists.

This "new orientation" in one sense should be taken to represent the end of one era and the beginning of another. North America has reached the end of what might be called the "pioneer" period — the age of exploitation. We have reached our continental horizons in North America — we have

cultivated the lands beyond the hills, we have populated the empty plains, and Agriculture in particular has been very successful in the problem-solving that has been part of this area and regional development — successful in that we have developed adapted crop varieties, new methods of soil management, controls for plant and animal pests and diseases, and new techniques and new implements to do it with. In fact we have been so successful that North America produces a food surplus, and our production is actually being reduced because of agricultural success in other areas, and a consequent reduction in the market for imported food in other countries.

With the end of this period of "pioneering" — the development of new land — our attitudes must change. We are no longer a country with unlimited resources — we now know what the limits are. The practices which were tolerable when we knew that we had more land and water than we could use are no longer tolerable today, when in areas of dense population, we have too little good land, and too little clean water. The problem today is not "more", in the sense of more land, more food, more people, but rather the problem of maintenance — to protect our resources, and to improve the damaged ones, so that our children and our children's children will live at least as well as we do. Since the Faculties of Agriculture all over North America have demonstrated their problem-

orientated efficiency in the exploitive stage, we should expect the same philosophy to work well when the problems are the maintenance of the quality of our environment, its land, water and air and its plants and animals, so that they may continue to serve and be enjoyed by man. (May his numbers not increase!)

The recent decision at McGill that the Faculty will continue to be at Macdonald for at least the next two years (and I am convinced, forever), means we can get on with our new developments and not waste our time on administrative wrangles. The expanded objectives of the Faculty also suggests that this would be a good time to have a new broom. Sixteen years is a very long time for a Faculty to have the same Dean, and a change is very desirable. To make this possible I have applied for and been granted leave for one year to serve with the Canadian International Development Agency in the Department of External Affairs in Ottawa, and at the end of that year it is my intention to apply for sabbatical leave (my first in seventeen years at Mac) so that I may give myself a refresher course in Soil Science, in order to come back to Macdonald as a teaching professor, with no administrative responsibilities!

Macdonald has a bright future — if I am lucky I will be privileged to be part of it.

H. G. Dion

What About Weather Control?

The earth is enveloped by the gaseous ocean that we call the atmosphere. We cannot speak of the top, nor of the thickness, of the atmosphere because it simply becomes more and more diffuse the higher we go. By the time we have ascended to a height of about three and a half miles, we have climbed through about one-half of the total mass of the atmosphere, and by the time we have ascended to about eleven miles, about three-quarters of the atmospheric mass lies below us. Through the lowest six to twelve miles (depending on the latitude and the season) the atmospheric temperature tends on the whole to decrease more-or-less steadily with height. This lower region is called the troposphere. Above this level, where the temperature tends to remain more-or-less constant with height, or even increase, lies the stratosphere. The troposphere is the region in which our day-to-day weather occurs. It is within this layer that certain major processes occur which involve the transport, both horizontally and vertically, of heat and the transport of water vapour in the atmosphere. This is the layer important to life, although life does not necessarily exist in quantity up to the top of the troposphere. In this sense, therefore, we can consider the troposphere to be the important layer so far as life on this earth is concerned. Some perspective regarding the thinness of this layer can be obtained by imagining the earth squeezed down to the dimension of a rather large grapefruit, in which case the troposphere becomes comparable to a sheet of thin paper wrapped around the grapefruit.

While the weather exists in such a thin sheet, life itself is concentrated

within an even thinner sheet. The very lowest layers of the troposphere, and the topmost layers of the earth and ocean, are called the biosphere, the region of life. Within the biosphere, not only does the atmosphere, the soil and the water affect the living material, but the living material itself interacts with and affects the biosphere. The interactions between living materials and the soil, water, and atmospheric components of the biosphere are the subjects of ever-increasing study these days, as man seeks to understand the relationships between life and its environment.

Such matters can be studied on a number of scales, ranging from a global scale to a microscopic scale, depending upon the focus of the research. For example, the meteorologist who concerns himself with forecasting for a period of say one to three days is interested in events which occur on a rather large scale, frequently including an entire hemisphere. His concern is with the so-called "weather systems", which are really huge eddies in the general circulation of the atmosphere, these eddies or "lows" being often many hundreds of miles in diameter. The climatologist, who is concerned about climate (which is really the integration of day-to-day weather on a large scale, both in space and time), deals in the scales of continents, seasons and years.

Imbedded in the large-scale atmospheric stream one finds smaller scale phenomena of great importance, for example the local shower or thunderstorm which, while extremely severe at times, is of relatively small dimensions (of the order of a few tens of miles)

and of rather short duration (measured in hours rather than days). These phenomena fit into what is known as the "meso-scale".

On an even smaller scale — for example the scale of an individual field or a small lake, or even a backyard garden — we find ourselves dealing with the so-called "micro-scale". This is the realm of micrometeorology and microclimatology. Here, we are concerned with the minute-by-minute weather within, for example, a standing crop or a forest, etc. (as opposed to the larger-scale, more general climate of the province or of the continent in which the field or forest is located). It is easy to see that as we come down in scale and approach the size of such things as a field of corn, or a single plant or leaf, or even an individual insect or animal, more and more will there be an increasingly close interrelation between the immediately adjacent atmosphere and the field or plant or animal itself. As we approach the boundary of the plant or animal, we discover between the atmosphere itself and the surface of the plant or the animal (or the earth, or the ocean or lake) a relatively thin "boundary layer". The boundary layer is rather like a thin skin of air attached to and surrounding the surface of the living material or of the earth or of the ocean. It is through this skin that the living material itself interacts with the surrounding environment. The atmospheric conditions within the boundary layer, and particularly right at the surface of the material, produce what is known as the "teleoclimate". Here, at the interface, the plant- and the animal-physiologist, the soil scientist, and the hydrologist, meet

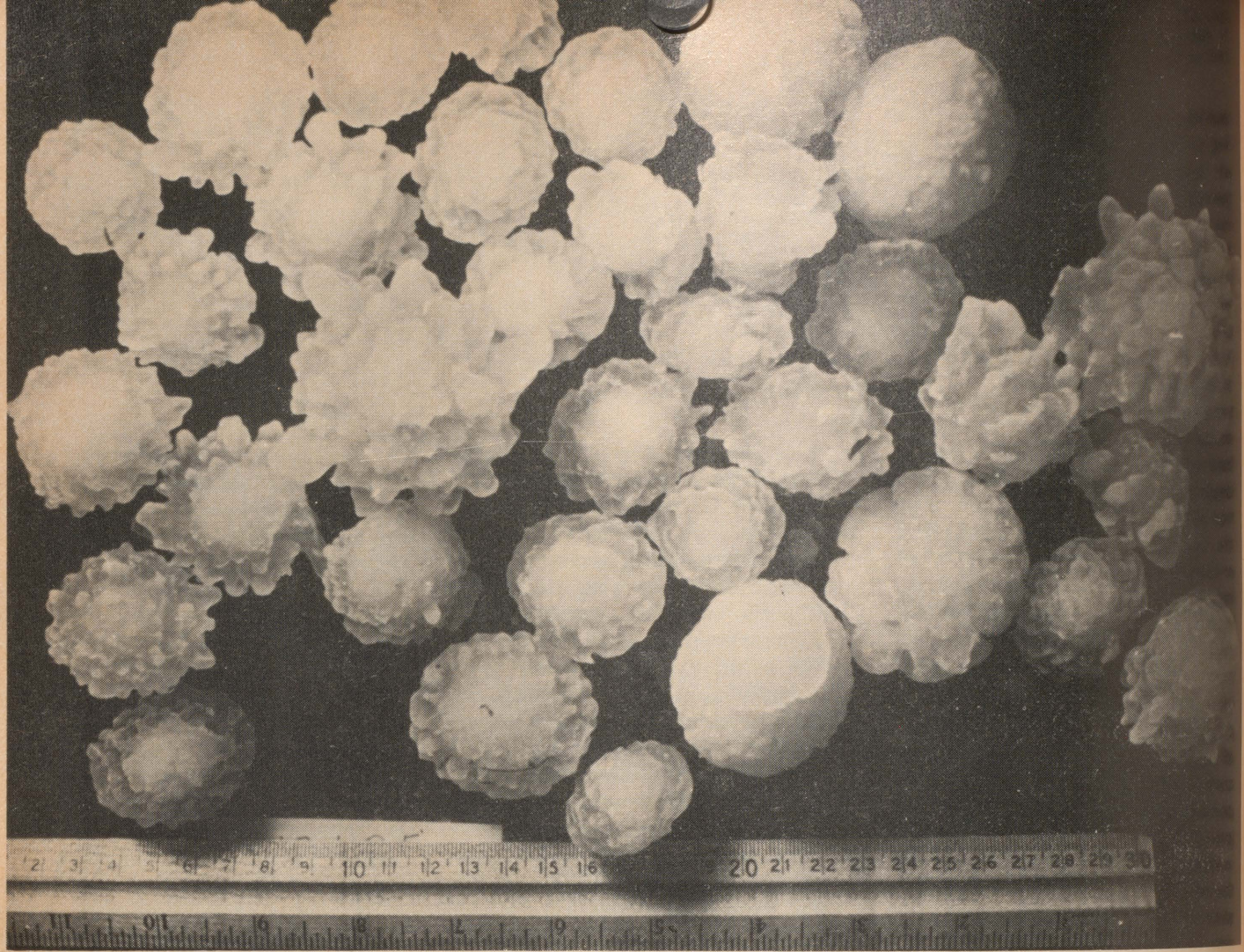


Photo by G. Isaac

with the physicist and the meteorologist to consider the interactions that occur, and the effects that these have upon the atmosphere on the one hand and upon the living material on the other.

Let us examine briefly what goes on at such an interface, for example the surface of bare soil. The primary source of energy for life is the sun itself whose solar radiation makes its way through the upper atmosphere to the earth's surface. What happens to this energy, and how is it disposed of once it arrives at the surface?

A portion of this energy is reflected from the soil's surface, the amount of reflection depending upon the nature of the surface; this portion goes back into space and is lost so far as the earth is concerned. The remainder is disposed of in four ways. Some, as heat, flows downward into the soil. Some is transferred to the air as heat, warming the atmosphere from the

surface upwards (which is why tropospheric temperatures tend to decrease with height). A very important portion is used to evaporate liquid water on and in the top portion of the soil. And finally, the soil surface itself radiates energy (in the form of infrared radiation) upward from the soil surface. Some of this is absorbed by the overlying atmosphere, mainly because of water vapour and carbon dioxide, and is re-radiated down again toward the soil. At the surface, therefore, we have an income of radiant energy from the solar source (visible light), plus an infrared (heat) income from the atmosphere, and four items of outgo from the surface. In the long run, outgo must equal income; otherwise the soil surface would either heat up or cool off indefinitely, and this is known not to occur. But although the energy accounts may balance in the long run, they do not necessarily balance on an hour-to-hour, day-to-day, or season-to-season basis. At night,

when there is no solar income, the other processes nevertheless continue (although the soil heat flow and the atmospheric heat flow may reverse direction), and the net result is usually an overnight cooling of the soil surface. The solar income varies seasonally and diurnally, and also with latitude, as well, of course, as with such meteorological factors as cloudiness, and all these factors introduce rhythmic and non-rhythmic variations in the energy flow.

A plant leaf is at least one degree more complicated than a soil surface, for a plant leaf has upward and downward facing surfaces, and in addition a small fraction of the incoming energy collected by the leaf is used for the processes of plant growth. This fraction is extremely small, however, and is usually ignored in consideration of the thermal state of the plant (though obviously it is of the utmost importance to the plant processes themselves). The surface temperature of a leaf may be

ft: Hailstones from storm on August 1969 in Edmonton, Alberta. Below: hail damage to crops in Alberta.

warmer or cooler than the surrounding air. We can look upon the leaf as "adjusting" its surface temperature in such a way as to balance its energy budget. Obviously if the "balanced budget" leaf temperature is too high, the plant tissues will suffer, as of course they will also if the plant temperature is too low. To summarize the leaf situation, the leaf temperature settles at that value for which the energy budget is just nicely in balance, and this temperature depends not only on certain properties of the leaf itself but also on the conditions of the surrounding environment with respect to radiant energy, temperature, wind, and humidity. Change one or more of these, and readjustments must be made. It is now possible, by considering all these elements, to predict the equilibrium temperature of a leaf, given the environmental conditions together with certain properties of the leaf itself. The point to emphasize here, though, is really this: that the leaf (and also the soil surface discussed earlier) sheds energy through the three processes of radiation, convection (i.e. the bodily transport of heat from the leaf or the soil surface by air motion), and by evaporation. Any of these processes can be altered, either naturally or artificially, a new state of equilibrium (perhaps more favourable to the plant) will be reached at a higher or lower leaf or soil temperature.

Similar considerations can also be applied to animals, including man himself. Here, however, the situation is complicated somewhat by at least two factors, one of these being that the animal metabolizes and the second that the animal is mobile and expends energy in mobility. In other words, radiant energy is not the only direct source of energy for the animal; the animal contains an internal "furnace", its metabolic system (energy income), and the animal expends some energy in the mechanics and physiology of motion (energy outgo). Taking these into account, however, the animal surface can be treated on the same basis as the plant or the soil surface. The processes of radiation, convection,

and (in many animals) evaporation all occur at the skin surface; under situations of heat stress, animals may increase their evaporative heat loss (and thereby reduce the skin temperature) by sweating or by panting, and a significant amount of heat is lost through evaporating during the simple process of breathing, as moisture is evaporated into the air in the upper respiratory tract. Furthermore, and if necessary, a mobile animal has the opportunity to alter the radiant income by simply moving into the shade or aligning itself more favourably with respect to the sun.

Obviously plants have considerably less control and self-regulation. Some can alter the configuration and alignment of their leaves to change the solar income, and they can to some extent control evaporation through stomatal activity.

If we wish to protect plants and animals from certain forms of stress imposed by the conditions of the environment, we can undertake a form of weather modification in the sense of altering the immediate environment in a more favourable direction. This, I think, constitutes weather modification in its broadest sense, although perhaps "weather" is not the proper word to use here. This sort of modification (although perhaps not always recognized as

such) has been in practice for centuries. The glasshouse is an example; this provides an artificial environment for the plant in which air motion is greatly reduced by the enclosure, thereby reducing substantially the process of convective heat loss from the plant. The presence of the glass may alter the radiation characteristics somewhat too, although it is now believed this is a secondary effect. The application of certain mulches on the soil surface or within the top few inches of the soil has long been used to alter the conducting, and to some extent, the radiative characteristics of the soil, thereby altering the microclimate within the upper layers of the soil (which of course alters the soil climate in which plant roots find themselves and has an indirect effect on the overlying air). The planting of shelter belts is a well-established practice for the reduction of winds in the lee of the belt. Water spraying of frost-sensitive plants during periods of frost hazard is widely practised; the freezing of water on the plant's surface alters the boundary layer and teleoclimate, since freezing water releases latent heat. Large fans and even helicopters have been used in orchards as an antifrost technique, the principle here being that stirring of the air holds the surface temperatures above freezing. Smudge pots in orchards not only warm the air



(to a relatively small extent) but more importantly introduce an artificial cloud which alters favourably the radiation characteristics of the microclimate within the orchard. Since cold air drains into lower surroundings, walls and hedges are sometimes constructed to divert cold air flow down slopes, thereby preventing the development of frost hollows. These are all practices which to some degree alter the microclimate of the field or orchard, or the teleoclimate of the plant. It is probably on this small scale that the most effective means of micrometeorological control or adjustment can be exercised.

Since the words "weather modification" today conjure up a dramatic vision of rather larger-scale modification, let us review the processes which are involved on these larger scales.

Apart from precipitation itself, water exists in the atmosphere in the form of water vapour. Its vapour concentration in the atmosphere is extremely low and variable, usually less than about one per cent by mass, and, therefore, we may properly regard it as being present in a trace amount. Though not abundant, it is undoubtedly one of the most important single components of the atmosphere, for it is responsible for all our precipitation and in addition plays an important role in the transport of radiation through the atmosphere. Vapour enters the atmosphere via the lowest levels of the biosphere, evaporating directly from open water surfaces such as lakes, oceans and rivers, and also (most importantly) via plants. Water moves upward through plants in the process known as evapotranspiration, which draws on soil water,

transports it up through the plant, and evaporates it into the surrounding atmosphere. This process is not only important as a prime supplier of water vapour into the atmosphere, but also as a necessary function of plants; the flow through the plants ensures the supply of nutrient material from the soil, it maintains turgor in the plants, and at the leaf surfaces the evaporation process provides a cooling mechanism to prevent undue heat stress on the plant material. This channel of admittance of water vapour into the atmosphere via the plant is one branch of what we call the water cycle. The other major part of the cycle is precipitation, which returns the water to the earth to close the cycle.

It has been estimated that if all the water vapour in the atmosphere were converted into liquid water and deposited uniformly over the surface of the entire earth, the depth of the resulting global puddle would be about half-an-inch. This seems rather low when one considers the tremendous rainfalls of the order of many inches or even feet, which occur in certain parts of the world. But the atmospheric processes which convert the water vapour into rain tend also to concentrate vapour-bearing air to the extent that heavy and even prolonged rainfalls become possible, at least in local areas; also the water cycle is a fairly speedy one, with a turnover time of the order of ten days.

These processes occur on the large scale and on the meso-scale. A prime requirement for precipitation (apart from water vapour) is upward motion, which cools the rising air and brings it to a state of water-vapour saturation. Such motion occurs, on the grand scale,

over hundreds of thousands of square miles, in the regions of low-pressure areas, which are simply huge vortices in the atmospheric stream. On the meso-scale, local summer showers and thunderstorms are in effect tall chimneys, up through which moist surface air is drawn. On an intermediate scale, mountain barriers force air aloft. But whatever the scale, upward motion is the key process through which the water vapour is brought to the condition at which condensation can begin and cloud can form. To alter such a large-scale process would be a formidable task indeed. Rather, one looks more deeply into the processes that occur between the time the cloud first appears and the time of precipitation actually reaching the ground; and here we uncover a fascinating chain of events.

For rain to occur at the earth, condensed droplets must somehow make their way to the earth. Being very small, they settle very slowly. The environment below the cloud is generally a hostile one so far as the droplets are concerned, and small droplets can and do evaporate rather quickly, never reaching the earth. If precipitation is to reach the earth in spite of the evaporative hostility of the lower levels, the droplets must somehow be persuaded to grow to substantial size either by continued condensation or by colliding and merging one with the other, until they are large enough to survive the fall to earth. Therefore we need not only a cloud but we need a process within the cloud which enables droplets to grow to a viable size.

Cloud droplets form and grow on small particles of solid and soluble material, ever present in abundance in the atmosphere; indeed, were there no such "nuclei", we might

well find ourselves in a state of perpetual cloudlessness and drought. If there is a very large number of such nuclei, and therefore a large number of droplets all competing for the available atmospheric moisture, then the droplets will necessarily be small; they may then float around in a cloud, neither growing nor falling as rain. Such a cloud is colloiddally stable, and is useless as a rain producer. If, however, some larger drops are introduced, these, falling through the cloud, collide with and collect the smaller ones, thereby growing to viable size. Such "trigger" drops can be stimulated by introducing salt particles (i.e. large nuclei) into a stable cloud, and this has been tried, with some evidence of success. It is worth noting at this point that clouds in a marine environment tend to precipitate much more easily than continental clouds; the marine air contains fewer but larger nuclei — predominantly sea-salt — hence fewer and larger droplets, whereas the continental air is overly rich in nuclei, thereby containing more but smaller droplets. So, in continental interiors where the need for rain is greatest, the clouds tend to be the least cooperative.

In cold weather, and when summer clouds extend aloft to cold temperatures, the freezing process becomes important. While a gallon of water in bulk will freeze at 32°F, the same water, dispersed into droplets, can be supercooled, sometimes to temperatures as low as — 30°F. Such supercooled cloud provides an icing hazard to aircraft, since the cold droplets freeze upon impact. If, in such a cloud, a few droplets do freeze, then they can grow quite rapidly as ice crystals, and this at the expense of the remaining droplets which

distil their water-substance onto the ice particles. The ice particles, therefore, grow to sufficient size to fall out; if they melt during fall, we have rain. Growth is further enhanced by a process called accretion, whereby the falling ice particle "ices up" as it collects supercooled droplets; growth is like a rolling snowball. Hail is the extreme example of this process.

So a supercooled cloud might be induced to precipitate by encouraging some of the droplets to freeze. Tiny particles of certain materials — notably silver iodide — promote such freezing, and are called freezing nuclei. Introduced into the supercooled levels of cloud, this can promote precipitation; it has also been used in attempts to precipitate out supercooled fogs over airport runways. The hail problem is being attacked on the basis that if one can induce a large number of ice particles, then the resulting hailstones, while more numerous, are at the same time smaller (and may even melt completely before reaching the ground). Ideally, one might eliminate the hailstorm by freezing every supercooled droplet in the cloud, thereby robbing the cloud of the prime material of which hailstones are made and converting the whole thing into a harmless ice cloud aloft. But the amounts of seeding material, and the logistics of distributing it, are formidable.

Many attempts have been made, and experiments performed, to modify precipitation and to ameliorate hail by seeding. There is some evidence of success, although the effects are extremely difficult to evaluate and passionate arguments rage over the alleged successes or failures.

One argument for increasing rainfall in agricultural areas seems to hang

on the thesis that more rain automatically leads to greater crop yield. This may be true provided that the extra rain is supplied at the proper time; but at the wrong time it can become a liability. Extra rain (or snow, for some purposes) can be most useful if kept under control. A useful operation might be to augment the winter snow-pack in certain watersheds, channel the spring runoff into reservoirs, and release a controlled outflow as and where required.

Seeding clouds is a meso-scale operation, because of the great problems involved in the delivery of nuclei to the proper region of the cloud. But always there must be cloud, preferably regenerating itself as fast as it is milked of its rain; otherwise we get a small amount, with no cloud left to continue with. Suitably extensive and persistent cloud systems are most often associated with the large-scale dynamics of the atmosphere, where as yet man can exercise no control; he can only try to exploit those favourable situations which nature provides from time to time. And always there will be the problem of conflicting interests. The extra snow that is acclaimed by the skier is cursed by the departments of roads and highways, and the prolonged dry spells so beloved by the summer tourist business spell doom to the farmer. If we could control the weather on a large scale, would we want to? Perhaps we should confine ourselves to the micro-scale, which is a more personalized and individual scale — and involves not such a large Pandora's box. Or does it?

Prof. R. H. Douglas,
Dept. of Agricultural Physics.

The Time is Ripe to Talk about CORN



Rudi Dallenbach, the College's Farm Director, had just finished inspecting the corn fields when he dropped into our office for a coffee break. Steve Casselman, CBC farm commentator, who works out of Macdonald College, was also taking a few minutes off and naturally Rudi was asked how his fields were shaping up. In our minds the ensuing conversation shaped up so well that we asked both men to continue and expand their talk on tape for the benefit of Journal readers.

Steve: First of all, Rudi, I'd like you to discuss the farm use of corn — and perhaps you might outline what different possibilities a farmer has to use corn at home.

Rudi: The most common use of corn for farm use — for livestock use — is to put the whole corn plant into storage. The way this is being done is with a forage harvester — which chops up the plant into approximately one-quarter inch lengths — and wagons haul this from the field to the barn. At the barn a farmer has a number of options for storing this forage for the winter and for feeding it to his animals. If he is a dairy farmer, the common practice is to use a vertical silo, blow the corn into the silo and with a silo unloader, feed this out in the wintertime. He doesn't necessarily have to add anything to the corn in the silo but can add up to 10 pounds of urea per ton to raise the protein level in his corn. The next method is to use a horizontal silo which consists of two walls, usually about 8 to 10 feet high and open at each end. He can store his chopped corn in that form. There are a number of advantages to a horizontal silo. It is

cheaper as far as construction is concerned. It lends itself to self-feeding where the animals will eat from the front of the silo and thus right through the silage. There are no mechanical gadgets needed to unload this silo so this is considered a cheap form of storage. Another form which has come into use in recent years, particularly in large operations, is to make a stack with chopped corn and cover it with plastic to cut down on spoilage. However, I would not make a stack unless I had over 1,000 tons of corn, so the larger the stack the better as far as stacking corn is concerned. Usually this is fed with a loader on a tractor and dumped into a feed cart and hauled to the animals.

Steve: At what percentage moisture would you take silage corn off the field?

Rudi: It should come in at about 35-40 percent dry matter. The best way to determine this is by looking at the cobs and as soon as the kernels are well dented it is about right as far as moisture is concerned. My personal feeling about this is that for dairy cattle I don't mind if the corn isn't too well dented. It should be in a doughy stage. I

don't want to see it milky but doughy. There are more precise methods. The Feed Testing Service at Macdonald College will do this or the Agronomes of the Quebec Department of Agriculture have facilities where corn can be tested for moisture. And there are also field testers. A farmer can purchase a tester and test his own corn, and with a little experience he can soon find out what moisture content the corn should be when he harvests it.

Steve: What usages are there for this silage corn?

Rudi: It is used for animal feed — for sheep, beef and dairy animals, but not so much for hogs.

Steve: Now there is another on-farm use and this would be grain corn.

Rudi: This is becoming more and more a factor in Quebec. We are harvesting not only the whole plant but we are also harvesting part of our own corn fields in the form of just the grain and there are a number of methods of doing this. The cheapest and most common method in use is the storage of high moisture corn and this can

left: With heavy-duty forage harvesters, forage can be chopped as fine as $\frac{1}{8}$ inch for better silage packing.
below: Single row corn picker, which quickly being replaced by larger units as grain corn increases in popularity.

be done in two ways. High moisture corn — that is corn with a moisture content of 25 percent or more — can be put into sealed, air-tight storage. If it is a good silo, which is completely air-tight, it will keep and can be fed to cows, pigs, sheep, beef and dairy animals. It is taken off the field with a picker-sheller — a machine which picks the cob, takes the kernel off the cob, puts it in a bin, and from there it can go into the silo. Another method is to take the whole cob from the plant. With this method the whole cob is shredded and put into the silo.

are using a sheller, then just the whole kernels go into the silo and this will keep as is. Another method with high moisture corn is to treat it with propionic acid. This has been in use for two or three years and is becoming more and more a common practice on some of our farms, particularly where there are not too large acreages to deal with. I would recommend propionic acid on small lots of corn, but it should be pointed out that it is strictly for animal feed.. It can't be used for anything else.

Steve: An increasing number of farmers are growing corn for the industrial market. When and how does a farmer decide that he wants to enter this market?

Rudi: This is determined by the use and by the market place. If there is a good market for industrial corn — that is for distilleries, for starch or for food, a farmer

corn. This means that first of all he has to have a sizeable acreage (from at least 200 acres up) because most industrial buyers buy in large lots. They are not interested in buying 10 or 15 acres of corn. He has to think in terms of a much larger acreage in order to supply that market. The other reason is the increased cost in investment involved in handling industrial corn. A farmer not only has the equipment to consider for harvesting, but he also has to consider the equipment necessary for processing this corn. By this I mean he has to get it down to approximately 15 percent moisture before any of the industrial companies will consider purchasing this corn otherwise it won't keep. However, there is one aspect for a farmer to keep in mind and that is that we are getting corn drying facilities in Quebec. If he can dry his corn in one of the elevators which are now being constructed throughout the province, then, of course, a smaller operator can supply a grain corn market. If a farmer has the whole line of equipment, including the dryer, on his own farm he has to make a considerable capital investment.

Steve: Can we talk about harvesting? At what percentage moisture do you take corn off the field?

Rudi: Normally we harvest shelled corn around 22, 23 or 25 percent moisture, which means this is a job that has to be done in a rather short period of time — before the snow flies. Last year considerable corn stayed out in the fields for two reasons: one was that we had a rather early snowfall, and secondly when the farmers decided to plant corn they didn't choose the right varieties which would mature sufficiently before the snow. Supplying distillery corn or any other corn industry is a very specialized field.

There is another market which he can supply and this is a domestic market. Feedlots, to fatten beef animals to market weight, are being constructed throughout our area. They are going to demand corn. Some of them may grow their own; some of them may just have the animals and purchase the grain corn. Dry corn can be used for your own home use too. It can

(Continued on page 180.)



Steve: What types of equipment do you need?

Rudi: You need a picker-sheller or a picker — one or the other, and then you need a blower with a re-cutter screen which breaks up the kernels at the silo itself. If you're picking the whole cob it has to be broken up and ground before it goes into storage. If you

may decide to supply this market and he may become a cash crop farmer. When he decides to do this he will first of all select the right kind of hybrids of corn which will assure him that they will be maturing under the climatic conditions wherever he is situated. He also should very carefully study the market situation before he really puts in a large acreage of

Macdonald Reports

Stepping Down

Dr. H. G. Dion has stepped down as Dean of the Faculty of Agriculture and Vice-Principal of Macdonald College. He is planning to take a year's leave of absence from the University to work for the Canadian International Development Agency. He will be responsible for the Agency's activities in the field of international agriculture. This is the field he left in 1954 when he was with F.A.O., to come to Macdonald. In a memo to staff Dr. Dion explained that he was firmly resolved to return to teaching and intends to take a sabbatical leave following his year with C.I.D.A., in order to prepare himself for a return to Macdonald in the fall of 1973. In his words Dr. Dion is leaving the administration but not leaving the College. The appointment of a new Dean will be made by Dr. Bell, Principal of McGill, on the advice of the Advisory Committee for the Selection of a Dean for the Faculty of Agriculture. This committee is made up of four members elected by the Faculty of Agriculture, one under-graduate, and one post-graduate student and four members named by the nominating committee of McGill Senate.



Acting Dean

Dr. Harold R. Klinck has been named acting Dean of the Faculty of Agriculture and acting Vice Principal for Macdonald College. Dr. Klinck assumed the responsibilities of the Dean's office effective the first of August as former Dean Dion stepped down to work for a year for the Canadian International Development Agency.

Dr. Klinck has wide experience on a number of Faculty Committees dealing with both administrative and academic functions. He is Chairman of the Agronomy Department and will continue this Chairmanship while serving as acting Dean until such time as a permanent Dean is appointed.



Sabbatical Leave

Professor Robert Broughton of Agricultural Engineering, will be on sabbatical leave in the 1971-72 academic year. During that year Professor Broughton will be stationed at the National College of Agricultural Engineering at Silsoe in Bedfordshire, England. In addition to working and studying at the National College, Professor Broughton will visit research stations, government agencies, consulting engineers dealing with land drainage, water conservation, and land utilization.

The Broughton family will make their home at 23 Tennyson Road, Bedford, Bedfordshire, England.

The Family

Farm

Published in the interests
of the farmers of the province
by the Quebec Department of
Agriculture and Colonization

BEEF CATTLE

Aims: To obtain genetically superior purebred beef cattle as regards rate of gain and hardiness, such that when used for cross-breeding they will transmit their hereditary qualities.

To encourage breeding herd operators in certain parts of the province to produce a surplus in order to make good our beef production efficiency — since we now produce only 20 percent of the beef consumed in Quebec.

To take advantage of soil resources in regions with only limited choice of alternatives as regards agricultural production (land in regions having a wide choice of possible productions is too expensive for non-intensive farming).

To consolidate beef-raising farms in specific zones so that the herds will be big enough for the enterprise to be profitable — taking into consideration each farm's circumstances.

Methods: 1 — Genetic Program

This program is in conformity with the Canadian beef cattle testing program and is intended only for raisers of registered purebreds.

ROP testing on the farm

Eligibility:

The breeder must have a herd of not less than 10 cows, and at least five calves (male or female) sired by the same bull and born within

90 days of one another. He must give all his calves the same treatment prior to weaning.

2. Conditions:

a) All members of a group of calves which is put on test before weaning must have been born within 90 days of one another and must be treated alike up to weaning. They may range in age from 45 days younger to 45 days older than the average for the group and must all be weaned on the date when their average age comes closest to 205 days. The optimum range in age would be from 160 days old to 250 days old, but some deviation from these limits may be allowed provided that all the calves were born within a period of 90 days.

b) All calves in groups undergoing testing after weaning must receive identical treatment and feeding during a period of 168 days. Calves excluded prior to weaning because of difference in age or treatment may be admitted after weaning provided they are weaned on the same day and receive the same feed as the other calves in the group.

No nurse cows or calves fed by foster mothers will be accepted.

II — ROP Testing At The Station

1. Eligibility:

Any purebred beef-cattle breeder in Quebec who is already enrolled for testing on the farm may apply to the station.

In order to be admitted to the station, every bull must be tattooed and the owner must produce its certificate of registration.

Charolais bulls must have at least $\frac{7}{8}$ Charolais blood.

2. Conditions:

There are two testing periods in 1971 — one which started in May, the other in November.

The final dates for enrolling animals:

a) March 1, 1971 for the test starting in May, and b) September 1, 1971 for the test starting in November.

Animals were admitted to the station: a) on May 10 and 11 1971 for the summer test, and will be admitted: b) on November 2 and 3 for the fall test.

In each case, the official test will start after an adjustment period of 28 days.

The compulsory test period is 140 days.

Bulls will be weighed at the start and finish of the test in the presence of a responsible officer appointed by the Committee.

Bulls must be 160 to 250 days old when admitted to the station.

The owner may choose the animals he wishes to have tested. All animals enrolled at the station must have good conformation and be free from abnormalities; prior to their arrival at the station, they will be examined by a person designated by the Committee.

3. Health:

The owner must produce a certificate stating that the animals come from a brucellosis-free and tuberculosis-free herd. This certificate (form HA 4) must have been signed by the veterinarian of the district from which the animal came, within the 30 days preceding the animal's arrival at the station.

The herds from which the animals come must also be free from minor infectious diseases.

Animals must be injected on the farm against shipping fever before they leave for the station. Before their animals can be admitted to the station, owners must produce a declaration signed by their veterinarian stating that this treatment has been carried out.

Responsibility for animals brought to the station still rests with the owner, but there will be a veterinarian on duty at the station.

4. Charge for testing:

Applications for enrolment must be accompanied by a sum of \$10 for each animal. The charge for testing will \$75 per head, payable at the end of the test.

A grant of 10 cents will be paid for each mile of the distance travelled in bringing and taking away the animal, up to a maximum of \$50. This amount will be deducted from the \$75 payable at the end of the test.

Animals must be taken away during the week following the end of the test. The owner will be charged \$2 per day for each of his bulls remaining on the station after this period.

If, for some reason, the Committee cannot admit an animal to the station, its enrolment fee will be returned to the owner.

5. Notification of results:

At the end of the test period, the station will issue a certificate for each bull, showing his average daily gain and index of gain and weight corrected to 365 days.

III — Promotion of Beef-Cattle Raising

Raisers of purebred, crossbred, and grade animals

1. Specified areas:

All of zone 3, comprising agricultural regions 1, 2, 3 and 12. In zone 2, comprising agricultural regions 4, 5, 8, 10, and 11. The program will be in effect in localities, townships and parishes which are obviously suitable for beef cattle raising.

2. Eligibility:

To qualify for this assistance, the farmer must:

- Provide the greater part of the labour for his enterprise;
- Be a farm operator in the territory covered by the program;
- Submit a written application on the proper form before July 31, 1971 and, in subsequent years, before June 1.

3. Conditions:

- This assistance applies to farmers with predominantly breeding herds whose cows are in calf to purebred beef bulls.
- This assistance applies to all the cows, starting with the first,

in herds having at least 20 potentially productive cows already.

- Not hold any milk shipping quota after May 1, 1971 or after April 1 of subsequent years, except in the case of farmers in zone 3 (regions 1, 2, 3, and 12) who are eligible for a second (parallel) herd which must be essentially beef-type.

To qualify for the benefits for a parallel herd, the written agreement of the agronomer is required stating that the applicant's situation has been investigated and that his soil and other means offer some prospects of success with a second herd.

As regards other areas, it will be necessary to wait until the implications of scientific zoning studies for regional planning have been determined.

For the purposes of this program's application, calvings must be arranged to take place before June 1 each year.

- The farmer must undertake to:
 - Enlarge his herd to at least 40 female animal units in accordance with the minimum annual percentage set;
 - Have his cows bred either artificially or naturally to a purebred beef bull;
 - Follow in all respects the instructions of the responsible agronomes concerning feeding, management and the use of recognized rearing methods in his herd.

BENEFITS:

The Department's assistance is based on the number of cows overwintered in the case of a breeding herd with fewer than 30 cows, and on the number of female animal units for those with more than 30 cows. This program is designed to help producers whose

ds are in the process of
at least information and to permit them to
active meet the demands of herd en-
gement up to a limit of 75 female
milk animal units and a maximum total
1, 1971 subsidy of \$1,475.

breeding herd operator has
30 cows, an enlargement of
per cent is required and each
unit, from the first to the thirtieth,
be subsidized to the extent
\$25.

the number of animal units is from
to 40, an enlargement of
seven animal units is required and
each unit from the thirty-first to
fortieth will be subsidized to
extent of \$20.

the number of animal units is from
to 75, no enlargement is
required but each unit from the
ty-first to the seventy-fifth
be subsidized to the extent
\$15.

definition of Animal Unit: 1,000
pounds of lightweight =
A.U. = 1 cow.

calculating the number of
animal units in the herd for the
poses of this subsidy, only
male cattle weighing 300 pounds
more are counted.

ample: Farmer with 48 A.U. (After investigation)
ethod of calculation

	Number of head	A. U. value per head	Number of A.U.
purebred cows.....	30	1	30
10-year-old heifers in calf.....	3	1	3
10-years-old open heifers.....	10	0.7	7
yearling heifers.....	14	0.5	7
heifer calves weighing 300 lbs or more.....	3	0.3	1

Number of subsidies	Number		Subsidy		
to 30 cows.....	30	×	\$25	=	\$750
A.U. to 40 A.U.....	10	×	\$20	=	\$200
A.U. to 48 A.U.....	8	×	\$15	=	\$120
					\$1,070

IV — Aid for the Purchase of Tested Bulls

1. Aims:

In order to complete its program
and help the farmers concerned
in specified zones to obtain pure-
bred beef bulls of high quality,
the Department of Agriculture and
Colonization offers special assist-
ance on the following terms to those
who buy them:

2. Eligibility:

To qualify for this assistance, the
farmer must: a) Be unable to use
artificial insemination; b) Provide
the greater part of the labour on
his farm; c) Be a farm operator in
the territory covered by this
program; d) Not hold a milk
shipping quota after May 1, 1971;

N.B.: This condition is temporarily
suspended until December 31, 1971.
It is retroactive to April 1, 1971.

The program was in effect in its
entirety starting last May 1, 1971

The placing of bulls will be based
on needs as judged by the local
agronome and approved by the
regional livestock adviser.

3. Conditions:

- To obtain this assistance, the
purchaser must, within three
months of buying the bull,
submit an application to his
agricultural information office
on the proper form together
with the bull's registration
certificate showing its transfer
to his ownership and a receipted
bill (duly signed by the vendor)
stating the animal's name,
registration number and price.
- Keep the bull for breeding
purposes for at least 24 months,
unless the local agronome gives
written authorization to the
contrary, with his reasons,
failing which the purchaser must
repay 75 per cent of the
Department of Agriculture
and Colonization's contribution.
- All owners of herds of less than
20 dairy or other cows must use
artificial insemination and are
therefore not considered eligible
for this purchase grant.
- Those owning more than 20
dairy or other cows, whether
they have a milk quota or not,
may qualify for a purchase grant
on the following terms and
conditions.

4. Benefits:

- The Department will pay
50 per cent of the purchase
price of a purebred bull which
has been tested (on the farm or
at a testing station) and has
obtained an index rating for rate
of gain at least equal to the
average for its breed. The
Department's maximum contri-
bution is limited to \$200.

N.B.: Bulls tested on the farm will
be considered as "tested" for the
purposes of this grant if they make
a daily gain equal to or better
than the average for their breed,
as follows: Hereford: 2.1 lb;
Angus: 1.6 lb; Shorthorn: 2.0 lb;
Charolais: 2.2 lb.

b) Untested bulls sired by tested fathers and meeting the following requirements:

Grant: 50 per cent of the purchase price up to a maximum of \$125.

	Weight at 365 days	Weight at 18 months	Weight at 2 years
Hereford.....	750 lb and over	1,000 lb and over	1,250 lb and over
Angus.....	700 " " "	900 " " "	1,100 " " "
Shorthorn....	750 " " "	1,000 " " "	1,250 " " "

c) Untested bulls sired by untested fathers:

Grant: 50 per cent of purchase price up to a maximum of \$75.

As regards weights, those recorded on a weigh-scale or estimated by measurement according to the Nasco Weight Computer are acceptable.

All bulls must be normal and of good type and have scored at least 85 in a conformation inspection.

This program of the Department of Agriculture and Colonization is in force until further notice.

V - Special Provision for Raisers of Beef Cattle in Northwest Quebec

ELIGIBILITY: To qualify for this assistance, the farmer must:

1. Provide the greater part of the labour for his enterprise;
2. Not hold any marketing quota or C.D.C. quota after the first of May 1971 except one qualifying for a second herd, which must be essentially beef-type;
3. Have submitted a written application on the proper form (Form 2) before the first of June 1971.

CONDITIONS:

1. This assistance applies to farmers who are primarily breeding herd operators;
2. The subsidy applies to herds which already have at least

10 potentially producing cows and is payable on up to 105 animal units beginning with the first cow, for a maximum possible total of \$2,500.

3. The farmer must undertake to:

- a) Enlarge his herd to at least 30 cows in accordance with the percentages shown in the following table;
- b) Follow in all respects the instructions of the responsible agronomes concerning the feeding, rearing and management of his herd;
- c) Have his cows bred either artificially or naturally to a purebred beef bull;
- d) Belong to the Northwest Quebec beef cattle breeders' association (L'Association des Eleveurs de Bovins de Boucherie du Nord-Ouest) or to a farm profitability study group (G.E.R.A.).

BENEFITS:

The Department's assistance is based on the number of cows overwintered by the farmer or (if he has more than 30 cows) on the total number of animal units overwintered;

If the farmer has 10 to 30 cows, an enlargement of 15 per cent is needed to remain eligible for the subsidy of \$30 per cow;

If the herd exceeds 30 cows (31 A.U. or more) no enlargement is required and the animal units (male and female) are subsidized according to the following table:

SIZE OF HERD	ENLARGEMENT	SUBSIDY	AMOUNT
1 to 30 cows.....	15%	\$30 per cow	\$ 900
31 to 50 A.U. (males and females) ..	none	\$25 per A.U.	\$ 500
55 A.U. (males and females).....	none	\$20 per A.U.	\$1,100 Max.

TOTAL: 2,500

Definition of Animal Unit: 1,000 lb of liveweight = 1 A.U. = 1 cow.

In calculating the number of subsidizable animal units, only female cattle weighing at least 300 pounds, and male cattle weighing at least 300 pounds but not over 700, are included.

Any farmer who does not satisfy the conditions previously mentioned will be ineligible for the current year's grant.

This program of the Department of Agriculture and Colonization is in force until further notice.

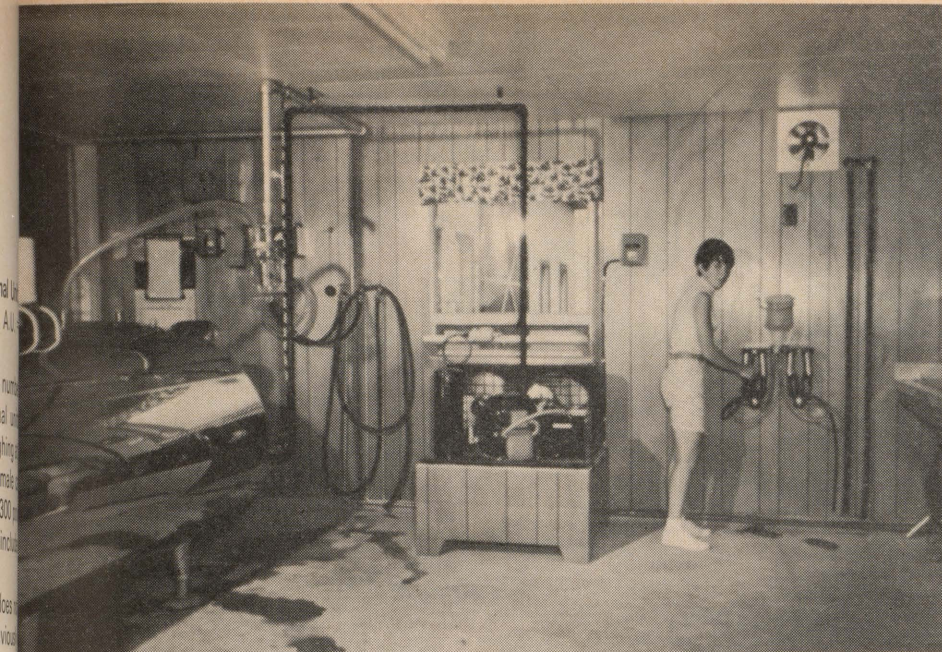
Number of Dairy Plants Drops by 146 in Four Years

According to figures supplied by the Quebec Agricultural Marketing Board, the number of dairy factories in Quebec fell from 413 in 1967 to 267 in 1970, a decline of 146 in four years.

The number of pasteurizing plants alone dropped from 139 to 96. The number of butter factories declined by well over 50 per cent - from 94 in 1967 to 42 in 1971.

During 1970, 41 dairy plants were put to other purposes and only two new ones started operating.

In January 1971, Quebec still had 96 pasteurizing plants, 42 butter factories, 10 butter and casein, 1 casein, 30 butter and skim milk powder, 49 cheese, 11 ice-cream, 3 yogurt, 2 powder and casein, 9 reworked butter, 1 concentrated and evaporated milk plant, and 13 milk reception stations.



Jacqueline Lemay in the dairy room on her father's farm at Parisville. The bulk tank will hold 3,500 pounds of milk.

production, consumption, marketing, cost, prices, imports and exports of strawberries intended for the processing trade.

The inquiry follows complaints that fresh, frozen, and preserved strawberries to be subjected to further processing in Canada, are being imported under conditions which threaten to cause serious losses to Canadian growers.

In order to protect these growers, the federal government imposed a surtax on imported strawberries, starting May 22, 1971, under the provisions of article 7 (1a) of the Customs duties act.

At the hearing set for October 18, 219 Argyle Avenue, Ottawa, the board will hear any persons concerned who wish to make recommendations. Those expecting to attend should notify the secretary not later than October 8. Statements and reports in support of proposals to be submitted to the Board must reach the secretary in writing before September 17.

The Quebec Agricultural Marketing Board

During the fiscal year ending March 31, 1971, the Quebec Agricultural Marketing Board held 45 regular meetings and 62 public hearings.

In keeping with a policy of giving those concerned an opportunity to be heard, which has now been in effect for some years, such hearings have been held in various parts of Quebec (including 64 in Montreal and 36 at Quebec City).

The board, a government organization, is concerned with applying the agricultural marketing act, the dairy products and dairy products substitutes act, the act to promote the development and modernization of dairy factories, and the act concerning the price of pulpwood sold by farmers and settlers.

Milk Storage and Shipment Milk Increasingly Popular

Temporary storage and shipment of manufactured milk in farm bulk tanks and tanker trucks is becoming increasingly widespread according to figures published in the annual report of the Quebec Agricultural Marketing Board.

These figures show 59.6 per cent of such milk transported in bulk in 1970 compared with 48 per cent in 1969. The report also reveals that 723 permits to transport milk and cream and 565 permits for transport by tank truck are currently in effect.

The dairy products and dairy products substitutes act empowers the board to issue permits for the transport of milk and cream and to set rates and decide routes for such transport.

Final Dates for Making Declarations of Damage to Non-insurable crops

Farmers suffering losses from damage by bad weather to crops not covered by the provincial crop-insurance plan must henceforth sign a declaration to that effect at their local agricultural information office within 10 days of the disaster, according to a spokesman for the department of Agriculture and Colonization with reference to questions raised by a press release issued early in June.

At the department, it is stressed that growers must go to their

agricultural information office to sign a declaration form and explain the cause of the damage, and that only declarations signed at such offices will be considered for investigation. Declarations sent by mail will be refused.

The last date for signing damage declaration forms has been set at October 30. None will be accepted later than that, with the exception that, in the case of crops susceptible to frost, the deadline will be set according to the average frost date for the past 10 years in the region concerned.

The department also reminds growers that their declarations will be used to compile statistics about total losses per type of crop but that they do not necessarily commit the department to pay any financial compensation.

Public Hearing on Strawberries for Processing

The Tariff Board, a federal body which has been instructed by the department of Finance to carry out an inquiry regarding strawberries intended for the processing market, will hold a public hearing at Ottawa on Monday, October 18, 1971.

The hearing is part of an inquiry aimed at a long-term assessment of the Canadian strawberry industry's viability. In particular, the board is required to supply the government of Canada with the fullest possible details on

STOP! LOOK! LISTEN!

Stop! here.

Look! Read all four pages of Q.W.I. news. Read the Publicity Outline in the September 1970 issue of the Journal which was written by Miss Hilda Graham.

Listen! To your provincial convention delegates' report of the discussion of contemplated changes in Q.W.I. publicity.

Think! About all of this.

Watch! For more information. In the meantime, report activities as usual plus short, descriptive articles of your W.I. in action. "Action" pictures are very welcome. Pictures should be black and white with no writing on the back.

Mrs. Perley Clark,
R.R. 1, Brownsburg, Que.
Publicity Convener for Q.W.I.

Argenteuil

Arundel: Heard an interesting talk on lapidary and a demonstration on gems. Dalesville-Louisa: Had a cake decorating contest. Frontier: Members and guests (an Ontario branch) enjoyed a humorous skit, "Ma and the Kids," depicting a tired Institute mother coping with the problem of getting her family out of bed and off to school. This was written by one of the members. Lakefield: Heard a letter of thanks for donation to Home and School display of children's art work at the Lachute Fair. Upper Lachute-East End: Bryant Gordon gave an interesting talk on hairdressing, helpful hints on cutting your own hair and held a contest on hairdressing.

Brome

Abercorn: Report on annual convention and plans made for entertaining W. I. branches. Austin: Report of annual convention. Garden party plans discussed. Report on reorganization showed 5,000 French and 8,000 English books have been catalogued and 125,500 books have been stamped out since library was established. There is also a 300 volume paperback exchange library. South Bolton: Had an antique display and talk on items by exhibitors. Entertained a neighbouring branch and held food sale.

Gaspe

Barachois: Mrs. St. Croix gave a report of her attendance at annual convention and a new member was welcomed. Guests were present to hear the record "Why Women Have a Right to Nag" by Sister Moore. Douglstown: Had a bake sale and proceeds sent second delegate to annual convention. Articles read from the Journal and a discussion re giving gifts to retarded children at sanitarium at Christmas instead of sending Handy-Bags. Wakeham: Roll call was pay by waistline. Sent 22 Handy-Bags.

Missisquoi

Fordyce: Sent 24 Handy-Bags. A trip to Upper Canada Village planned for August meeting. The following reading was given by Citizenship Convener: A Canadian is a fellow who sips Brazilian coffee from an English cup while sitting on Danish furniture after coming home in a German car from an Italian movie and writes

his M.P. with a Japanese ball point pen demanding that he do something about foreign domination.

Megantic

Inverness: Members are pleased that their President, Mrs. R. C. Muir won first prize in the J & P Coats competition and that her sister won second prize in the Q.W.I. competition. Kinear's Mills: Along with Inverness heard reports of provincial convention and made plans to cater for a wedding reception. Roll calls were: a necessary item for a first aid kit and a cereal and how it comes to our table.

Montcalm

Rawdon: The branch has found a way to help drug-trapped youth. Impressed with the work being done at the Spera Drug Rehabilitation Centre, situated on a farm in Rawdon, the W.I. held a card party and with the proceeds of \$208. purchased camping equipment for the boys and girls taking the "cure." Spera (a Latin word for hope) is run by Gerry and Sharon Burton, who know from bitter experience what being a drug addict means. Of the 80 people who have been through the Spera program during the past year, 50 of them are drug-free and leading productive lives. To reinforce the ex-addict's new strength, weekly meetings much like Alcoholics Anonymous are held in Montreal.

Rawdon W.I. has also found that service can be a two-way street. Several members visit the Heather Hospital weekly and help by writing letters, etc. In gratitude

these visits, a patient has nated a hooked rug. There will be drawing on this rug and in tober another drawing will be d for a comforter, transistor radio d hand woven place mats — th drawings in aid of the branch's arly benevolent work.

wdon's play "Polishing Henry" is not only taken to the patients Heather Hospital but entered the Drama Competition at the vovincial convention and won st prize. Congratulations!

chmond

evland: Had a homemade bread ntest, heard the provincial nvention report, discussed rsaries and planned a visit to the xville Home. Denison Mills: ough gift for a little boy who d the misfortune to have had s foot cut off. Quilt blocks were ough in and flowers sent to a ntient in Sherbrooke hospital. ore: Roll call was bring an airloom and describe its history. e oldest heirloom was a violin vned by the Griffith family before 69. A crocheted vest by rs. M. H. Hughes won first prize r the County at Richmond Fair d also won the Inter-branch ompetition Cup for 1971-72. A uest from England presented brass rubbing plaque to the ore branch. Richmond and elbourne visited the museum and e Historical Society and after- ords enjoyed a picnic.

chmond Hill: Contest on best ticle made from something that ou would throw away. First prize inner was Mrs. J. Mason with braided rug, 2nd prize went to rs. Wm. Bailey for her hot-pot ats made out of string. Richmond oung Women: Complete report of vovincial convention. A first aid urse given in early August.

hipton: Heard a paper read on the ganization of Shipton branch hich started April 1932 through e efforts of Miss Gwen Elliott. large number of tickets sold on ult to be drawn for in the fall.

White elephant sale held. Spooner ond: Member tied for 3rd place on rocheted afghan at Q.W.I. handi- aft competition. Miss E. utchings' crochet vest won 2nd rize at County level — Inter-branch ompetition at Richmond Fair. A rays and means project was to

sell refreshments at a local farm auction. Excellent report of provincial convention given.

Stanstead

Ayer's Cliff: Mrs. Lloyd Bliss of the Stanstead Journal spoke on the joys and sorrows of publishing a weekly newspaper. Members of Ascot branch were guests. The County President presented 25-year pins to six members and a musical program was enjoyed on Guest Day. This branch is sending a girl to camp. Beebe: Flowers sent to the President who is ill in hospital. Papers read on drugs, Lester Pearson's award from the Queen, Dr. C. H. Best, co-discoverer of insulin, Q.W.I.'s 60th anniversary, and the home barbecue. Mrs. H. G. Taylor as guest speaker, told about the W.I. across Canada, stressing the importance of the local branch. Hatley: Plans made for a picnic table to be placed on the Common. Sending a girl to camp for two weeks. Hatley Centre: The Convener of Agriculture read an article on the little known fact that some of our popular flowers and shrubs are poisonous. Handy-bags sent to Save the Children fund. Stanstead North: An In Memoriam fund has been established to continue, as the former Restoration Fund did, the upkeep of the 152-year-old Manseur (Old Red Brick) Schoolhouse. A new member was welcomed at the June meeting. Concern was expressed about Hydro Quebec's practise of defoliating between poles, especially across farm lands, and a letter of protest will be sent. It was felt that with so many unemployed, brush cutters should be available to clear the growth.

An Enjoyable Outing

The Dewittville branch enjoyed a visit to the home of Mrs. Lorraine Tremblay at Franklin Centre and later in the afternoon proceeded to the home of Mr. Leslie Rennie of Brooklet.

Mrs. Tremblay is well known for her artistically decorated home. Upon entering her kitchen, a loom is in evidence and at present Mrs. Tremblay is making drapery material. Each wall in her home is lined with paintings — oils and pastels — still lifes, portraits,

landscapes, mood paintings as well as some abstract and surrealistic ones. She has handmade braided mats, dried and dyed wild flowers and weeds which are all beautifully arranged. There were works in ceramics, among them being a sculptured head of her husband. Mrs. Tremblay is certainly very gifted as evidenced by her numerous and beautiful creations and we certainly appreciated the opportunity of visiting her home.

Mr. Leslie Rennie's home at Brooklet, formerly owned by his grandparents, is filled with antiques such as furniture, cranberry glass, early kitchen utensils and hand-knitted bedspreads. In a portion of the house is the old post office of years gone by. Mr. Rennie had Cook's old store, formerly owned by Minta Cook, which once straddled the Canadian-American border, moved to his property. It still contains much of the merchandise of former days. Black's Church, an early church at Rockburn, was also moved by Mr. Rennie to his property. He also has a farm machinery museum in one of the barns. This group is grateful to Mr. Rennie for sharing with us his enjoyment of collecting antiques.

A Branch Evolves with the Times

A good part of the history of the village of Brownsburg is to be found in the minutes of the Brownsburg Women's Institute since it was organized, with 34 members, on May 3, 1926. Always willing to learn and develop their individual talents, the W.I. members have been alert to the various needs in their community and elsewhere and ever ready to help.

Before there were Welfare Agencies, the W.I. distributed food and clothing to needy families and arranged for medical help as well. Deep interest in education has been shown in many ways. Numerous children have received prizes from the W.I., flags were bought for the Brownsburg High School, teachers were entertained annually. As sewing wasn't taught in the school, sewing courses were sponsored for the teen-agers. One of these teen-agers became so adept at dress-making that her mother

started to make her own clothes and now sews for other people as well. (She is also a W.I. member now.) A recent project is the offer to 4H Club girls of demonstrations in cake decorating, rug braiding, gift wrapping and sandwich making.

For years technicians came from Macdonald College to give courses to the ladies (and non-members were welcomed) in cooking, dress-making, millinery, gloves, slippers and so on.

During the years many petitions were signed and numerous resolutions made. On several occasions members attended Municipal Council meetings to make a request for the betterment of the town.

Through World War II years parcels were sent to every Brownsburg boy who was overseas. Ditty Bags were filled for the Navy (this was the Banner Branch in Quebec for the largest number of Ditty Bags). Blankets were sent to refugees, donations made towards buying an ambulance, a mobile canteen and the "Argenteuil" Spitfire. Cookies have been sent all through the years to the Ste. Anne's Military Hospital, barrels of apples sent for a number of years to the Ste. Agathe Hospital, donations made to the Grace Dart Hospital and many other places in need.

A Handicraft Fair was begun in 1954 and has continued as an annual event. Members compete in the County W.I. handicraft at the Lachute Fair, enter the Coats Competitions and send exhibits to the Ottawa Exhibition.

Brownsburg W.I. has taken a special interest in senior citizens and twice yearly bring much happiness to the older folks in their town by taking them for a drive to see the beautiful colours in the fall and treating them to a Christmas party. The large numbers attending show how much this service is enjoyed.

The W.I. projects have taken a great deal of money plus many, many hours of voluntary work in fund-raising projects such as lawn socials, films, card parties, food sales and catering. However, it has not always been work as time has been taken for picnics,

sleigh rides, and bus trips to many places as well as the times of fun interspersed in their monthly programs.

On May 3, 1971, 39 of the present membership of 57 paused to celebrate their 45th anniversary at the Holiday Inn restaurant in Hawkesbury. Unfortunately, Charter Member, Mrs. John Seary, was unable to be present due to ill health. Mrs. M. Crosby read the Memorial Roll of the many faithful members now gone. Mrs. F. Barker read the minutes of the first meeting and Mrs. C. Stephens gave the highlights of the past 45 years. Greetings were brought by Mrs. G. McGibbon from the Q.W.I. and the F.W.I.C., and County President, Mrs. R. Warwick, also brought greetings. Mrs. McGibbon spoke on the future of the W.I. and toasts were made to the Queen and to Life Members. A beautiful cake had been made and decorated for this occasion by Mrs. Hector Mason.

First Canadian Life Membership

The following is reprinted from the 1933 files of the Elmside W.I.

"Presented with Life Membership in Federated Women's Institute of Canada.

"The home of Miss Sophia J. Armstrong, B.A., was the scene of a small gathering on the afternoon of May 30, 1933, when a few members of the Women's Institute met to make a presentation of a Life Membership in the Federated Women's Institutes of Canada to Miss Armstrong.

"With Mrs. W. J. Murray presiding, Mrs. R. W. Hodgins gave the address and Miss Abbie Pritchard presented the certificate and pin. Miss Armstrong was pleased with this recognition and, while expressing her thanks, wished the W.I. work continued success.

"In presenting this Life Membership, which is the first to be given in the Dominion of Canada, the W.I. members feel it is but a slight recognition of the honour that should be shown Miss Armstrong. A pioneer in this work, she has given unsparingly of her abilities and time to further work

for 'Home and Country.' Miss Armstrong was the first County President (Pontiac), the first Provincial President, and a member of the F.W.I.C. Board when it was formed.

"The province is honoured in having the first Life Membership in the F.W.I.C. and Pontiac county Women's Institutes are pleased to have had this honour come through them.

"Tea was served and a social hour spent. Among those present were Mrs. W. J. Murray, Mrs. R. W. Hodgins, Mrs. W. Horsfield, Mrs. W. J. Thompson, and the Misses Jennie Armstrong, Edith M. Edey and Abbie Pritchard."

Miss Armstrong died March 20, 1934.

Another "First" for Women?

Our Q.W.I. Past President, Mrs. George McGibbon, appears to have led the way into a new field of endeavour for women. Congratulations are due Mrs. McGibbon as she is to be the official judge of Shorthorn and Aberdeen-Angus cattle at the Perth, Ontario, Fall Fair.

Well done!

We were pleased to learn at the annual convention that Mrs. Gladys Woolley of Hemmingford W.I. has received commendation by the judges at A.C.W.W. for her essay entitled "My Countryside — Today and Tomorrow."

Thank You

"Will all the members of Q.W.I. who so very kindly remembered me with cards and letters please accept this as a personal thank you. I was so very sorry I could not be with you at the Convention and will always regret missing the 60th Anniversary of Q.W.I."

Edyth R. Westover,
1st Vice President,
Q.W.I.



Top: Charter member, Mrs. Thomas Kerr, cutting the cake at Howick's 60th Anniversary party. Centre: Mrs. Arthur Kerr presenting Life Membership Certificate to Mrs. Huntley Greig, Past President. At right, newly elected President, Mrs. Donald Chisholm who presented the pin. Below: Members and friends enjoying the festivities.

Howick Celebrates 60th Anniversary

Howick W.I. celebrated the 60th anniversary of their founding on May 13. The gathering was held in the spacious rooms of the Howick Curling Club where spring flowers decorated the small tables.



A beautiful bouquet of yellow chrysanthemums and iris on the head table was placed there in memory of Bertha Lang by her husband. After the opening Ode and Collect, Ms. Huntley Greig welcomed approximately 100 guests. Members were present from all the branches in Chateauguay County including Cercle des Fermieres. One charter member, Mrs. T. Kerr, was able to be present and cut the anniversary cake.

A short program consisting of minutes from early meetings and a reading of Gregory Clark's "The Pin" was much enjoyed. Mrs. Arthur Kerr and Mrs. Donald Chisholm then presented Mrs. Huntley Greig with a Life Membership pin in recognition of her valued service to the W.I. Music was provided by 10 young violinists under the direction of Mrs. Johnston and two beautiful piano solos by Sylvie Touchette. These young people have all gained high marks in the recent music festival.

Delicious homemade buns with fillings, anniversary cake and ice cream were served to the guests, who enjoyed visiting over a cup of tea.

Winners in the ever-popular J. & P. COATS Embroidery Competition:

First Prize: Mrs. Alice Muir, Megantic Co.
Second Prize: Mrs. J. McCaffrey, Chateauguay-Huntingdon Co.
Third Prize: (tie)
Mrs. M. Lewis, Missisquoi Co.
Mrs. W. Sutor, Sherbrooke Co.

Winners in the Q.W.I. Competition:

Weaving — Poncho —
1st Prize: Mrs. H. G. Taylor, Sherbrooke Co.
Sewing — Pant Suit —
1st Prize: Mrs. Jas. Robertson, Chateauguay-Huntingdon Co.
Girl's Dress —
1st Prize: Mrs. Jas. Robertson, Chateauguay-Huntingdon Co.
Stitchery — Afghans —
1st Prize: Mrs. H. L. Wallace, Sherbrooke Co.
2nd Prize: Mrs. F. Cox, Megantic Co.
3rd Prize: (tie)
Mrs. C. Drummond, Sherbrooke Co.
Mrs. W. Lancaster, Richmond Co.
Embroidery — Cushions —
1st Prize: Mrs. M. Honey, Rouville Co.
2nd Prize: Mrs. H. Robertson, Sherbrooke Co.
3rd Prize: Mrs. B. Enlow, Argenteuil Co.

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be ground up and fed to pigs, sheep, beef or dairy cattle. Normally any corn which has been dried goes into the industrial market.

Steve: To harvest grain corn how imperative is it that the corn be taken off at a rapid rate?

Rudi: I don't think this is very important. As a matter of fact, I think it depends on the moisture of the kernel. You may have a variety of corn which matures in 75 days, or you may have one which matures in 85 days. You have a certain time span so your harvesting depends entirely on the moisture of the corn and it can be spread out over six weeks as far as that goes. It doesn't have to be done on Saturday or Sunday because there is no emergency unless you have a very large acreage and you want to get it in.

Steve: After the corn is harvested do you put the stubble back in the ground, and if so why?

Rudi: First of all you have to prepare a seed bed for the next year. That's one of the reasons why we are ploughing and putting the stubble back into the ground. Some people may say there is no need for this — that you can plant in between the rows with proper weed control and consequently you don't need to plough this down. At the same time we are also trying to control the corn borer by covering up this trash. Some people say it might be less expensive to use insecticides rather than mechanical means for disposing of this trash. There is going to be a lot of material on top of the soil in any corn field where only the kernels have been harvested. If this field is going to be prepared for another crop the following year it should be ploughed down in the fall, whenever possible, for the sole reason that in spring we should be planting corn, not ploughing. Also the soil should have time to settle, to break down, so the capillary movement in the soil can be established. If you do plough in the spring and experience a very dry spring and summer, the crop really suffers because there just isn't any moisture coming up from the subsoil. Spring ploughing, therefore, needs a lot of water during the growing season and sometimes you don't have it.

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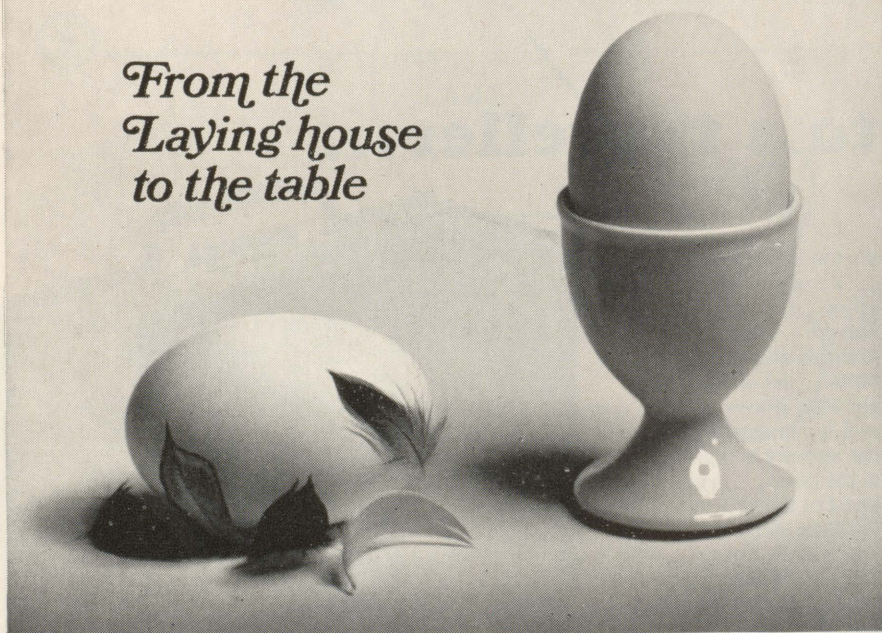


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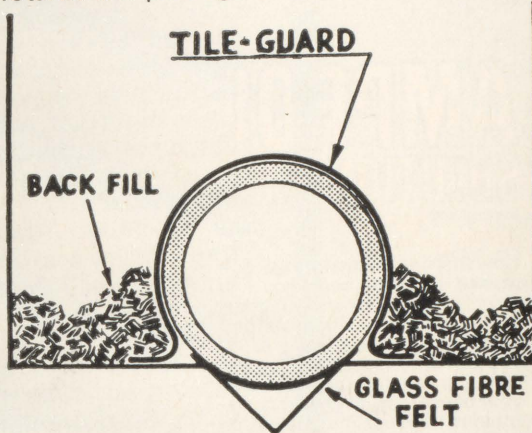
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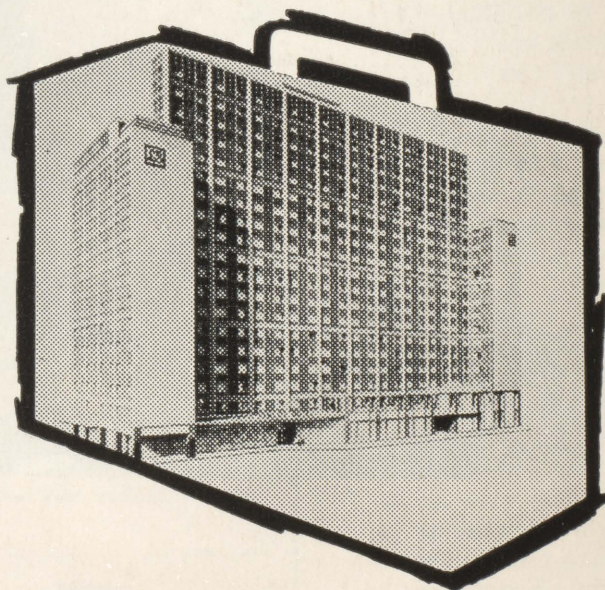
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